

# PATENT COOPERATION TREATY

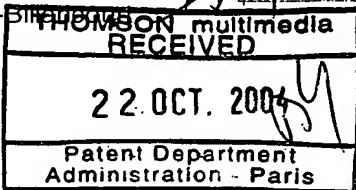
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From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

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NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

20.10.2004

Applicant's or agent's file reference  
PF020086

## IMPORTANT NOTIFICATION

International application No.  
PCT/EP 03/50270

International filing date (day/month/year)  
26.06.2003

Priority date (day/month/year)  
10.07.2002

Applicant  
THOMSON LICENSING S.A. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

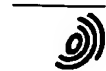
The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



European Patent Office - P.B. 5818 Patentlaan 2  
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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PF020086	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/50270	International filing date ( <i>day/month/year</i> ) 26.06.2003	Priority date ( <i>day/month/year</i> ) 10.07.2002
International Patent Classification (IPC) or both national classification and IPC H04B7/155		
Applicant THOMSON LICENSING S.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
 

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:
 

I    ☒ Basis of the opinion

II   ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



IV   ☐ Lack of unity of invention

V    ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI   ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

Date of submission of the demand  02.02.2004	Date of completion of this report  20.10.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Larcinese, A  Telephone No. +31 70 340-3823 <div style="text-align: right;">  </div>

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/50270

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, Pages

1-7 as originally filed

### Claims, Numbers

1-6 received on 22.09.2004 with letter of 22.09.2004

### Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/50270

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	1-6
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

The invention discloses a radio communication repeater (claim 1) including a first path to receive signals in a first frequency band (f1), to translate the received signals into a second frequency band (f2) and to transmit in the second frequency band (f2).

Such a repeater is disclosed in D1=EP-A-0 118 997.

The subject-matter of claim 1 differs from D1 in that the repeater also includes a second repeating path and a management circuit to disable transmission from the first path if the second path receives signals first and to disable transmission from the second path if the first path receives signals first, said first and second frequencies being separated.

The problem solved by such a combination of features is to overcome echoes in an environment such as indoor environment when using repeaters.

D1 does neither disclose such a problem nor such a solution. Though D2= EP 0 913 959 discloses two chains of repetition, it does not disclose a management circuit capable of disabling one of the two chains.

Therefore, the man skilled in the art would have no hint to reach the solution disclosed by claim 1 by combining D1 with D2, neither starting from D1, nor starting from D2 as closest prior art.

Such a repeater is not obvious from the prior art, therefore the subject matter of claim 1 is new and inventive and is industrially applicable.

## NEW CLAIMS

1. Radio communication repeater characterized in that it includes:

- a first path (10 to 16) to receive signals in a first frequency band, to translate the received signals into a second frequency band and to transmit in the second frequency band,
- a second path (20 to 26) to receive signals in the second frequency band, to translate the received signals into the first frequency band and to transmit in the first frequency band; and
- a management circuit (30 to 35) to disable transmission from the first path if the second path receives signals first, and to disable transmission from the second path if the first path receives signals first.

said first and second frequency bands being separated.

2. Repeater according to Claim 1, characterized in that the management circuit includes thresholding means (30, 31) to compare the received signals with a receive threshold, the signals being considered received if they are above the said threshold.

3. Repeater according to one of Claims 1 to 2, characterized in that the first path includes a first translation means (12) to translate the signals from the first frequency band to an intermediate frequency band and a second translation means (14) to translate the signals from the intermediate frequency band to the second frequency band, in that the second path includes a first translation means (22) to translate the signals from the second frequency band to the intermediate frequency band and a second translation means (24) to translate the signals from the intermediate frequency band to the first frequency band, and in that the repeater includes a first local oscillator (OSC1) cooperating with the first translation means (12) of the first path and the second translation means (24) of the second path, and a second local oscillator (OSC2) cooperating with the second translation means (14) of the first path and the first translation means (22) of the second path.

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4. Repeater according to Claim 3 when it depends on Claim 3, characterized in that the thresholding means (30, 31) compare the signals (M1, M2) in the intermediate frequency band.

5. Repeater according to one of Claims 1 to 4, characterized in that the management circuit disables the transmission means of the first and second paths when no signal is received by the first and second paths.

6. Repeater according to one of Claims 1 to 5, characterized in that the disabling of the transmission means of the first and second paths is carried out by cutting the power to amplifiers (16, 26).